

CHAPTER 7. INTERIOR PAINTING (EXCEPT FLOORS)

Section 1. GENERAL

7.1.1 SCOPE. This chapter covers the types of paints and accessory products required to adequately finish interior walls, ceilings, and trim of standard structures such as living quarters, administration buildings, mess halls, recreation facilities, hospitals, warehouses, and storage facilities. It includes finishes for rooms in these structures including kitchens, laundries, shower rooms, and wash rooms. The painting of special areas, such as clean rooms and cold storage rooms, special objects such as stacks, boilers, and storage tanks, and special surfaces such as acoustical tile, insulation, and bituminous surfaces is covered in Chapter 10.

7.1.2 PURPOSE OF INTERIOR PAINTING. The painting of interior surfaces is intended primarily to improve the following:

- a. Sanitation and cleanliness: See 1.2.2.
- b. Illumination and visibility: See 1.2.3.
- c. Safety and efficiency: See 1.2.4.
- d. General appearance: See 1.2.5.

In addition, certain areas require the use of durable coatings in order to provide adequate protection. The selection of coatings for these areas is specific, e.g., kitchens, laundries, and shower rooms.

7.1.3 CHOICE OF FINISHES. Coatings used for interior painting generally are not the same as those used for exterior painting, since the latter are primarily designed to withstand exterior environments. The availability of interior finishes is comparatively broad allowing considerable choice of product to meet the properties desired.

7.1.3.1 Substrate or Surface. The substrate to be painted may be any of the following:

- a. Wood: This might be any of the types listed in Table 4-5. Note that all open grain wood (see 4.5.5.3a) must be filled prior to final finishing. Its form may be either solid lumber or plywood.
- b. Metals: Metals used in interior areas may be iron, steel, galvanized steel, aluminum, brass, or copper.
- c. Concrete and Masonry: This group includes all construction materials made with, or held together with, cement. Among these are concrete, concrete block, cement asbestos surfaces, brick, stone, and stucco.
- d. Plaster and Wallboard: The walls may be constructed with either plaster applied over lath or wallboard which is gypsum plaster sandwiched between sheets of heavy paper. The latter is often called dry wall construction.

e. Miscellaneous Construction Materials: These include board type products such as:

(1) Hardboard. This is made of compressed ground wood which is impregnated with synthetic resins. It is similar to wood except that the finished surface is very smooth, and it may be sanded lightly prior to painting to improve adhesion.

(2) Compressed board. This is made of compressed paper. Its surface is similar to that of wallboard and is treated in the same manner.

(3) Particle board. This is made of wood chips impregnated with synthetic resins. Its surface is similar to that of hardboard and is treated in the same manner.

f. Painted Surfaces: Once the above substrates have been painted, the old paint becomes a more important factor in determining the choice of paint for recoating than the substrate. The new and old coatings must be compatible to avoid lifting or poor adhesion. Try to use paints similar to the old paint (see 2.2.6). Sand or dull high gloss surfaces prior to painting to improve adhesion. Before using paints containing strong solvents, test a small area to be sure that no lifting or wrinkling of the old paint will result (see 5.2.4.2).

7.1.3.2 Type of Finish. The finish desired may be clear or pigmented, and may vary in gloss as well.

a. Clear Finishes: Transparent coatings are applied to protect the substrate, e.g., wood, brass, or copper, without obscuring its appearance.

b. Pigmented Finishes: Most paints are pigmented to make them opaque and to give them color. When applied on a substrate or surface, they not only protect it against washing, abrasion, etc., but also obscure its former appearance and provide the desired color. Therefore, non-esthetic construction materials, e.g., concrete block, can be used and, through the proper choice of paint, result in a pleasing architectural appearance. Paints can also be used to change colors when repainting, and can aid in improving illumination by the use of lighter colors.

c. Gloss: The degree of gloss depends on the volume ratio of pigment to binder. It may be a high gloss, flat (dull or lustreless) or semigloss which is intermediate. (See 6.3.4.1 and Figure 6-1.)

d. Color: The color may be anything from white to bright colors, such as yellow or red, to black. A metallic aluminum color can be provided by the use of aluminum paint, either ready-mixed or mixed on the job.

7.1.3.3 Painting Environment. If painting is done in areas where odor is a problem, e.g., near food areas and in occupied areas, then odorless paints must be used. These may be latex paints or paints made with odorless mineral spirits.

7.1.3.4 Type of Service. Most interior paints are for normal service. Some are specially designed to withstand abnormal environments, e.g., moisture-resistant and mildew-resistant paints for laundries and shower rooms.

Section 2. TYPES OF PRODUCTS AVAILABLE

7.2.1 GENERAL. A knowledge of the types of products available is useful in determining the capabilities and limitations of those which are recommended. There are sound reasons for the existence of each product specification, and these become more apparent with some insight into the makeup of the finishes used. See Chapter 6 for a complete discussion on paint materials.

7.2.2 BASIC TYPES OF COATINGS. The following types of finishes are used for normal interior painting. Their relative properties are discussed in Chapter 6 in the sections noted below:

- a. Alkyd Finishes: See 6.2.2.
- b. Cement Paints: See 6.2.3.
- c. Epoxy Paints: See 6.2.4.
- d. Latex Paints: See 6.2.7.
- e. Oleoresinous Finishes: See 6.2.10.
- f. Phenolic Varnishes: See 6.2.11.
- g. Rubber-Base Enamels: See 6.2.13.
- h. Urethane Finishes: See 6.2.16.

These finishes are compared in Table 7-1.

7.2.3 SPECIALIZED COATINGS. Paints for specialized uses are covered in Chapters 9, 10, and 11. There are six major groups as follows including stains which are covered in this chapter:

- a. Floor Finishes: These are fully described in Chapter 9.
- b. Special Painting Materials: These include anti-sweat coatings, fire-retardant, and heat-resistant paints, nonslip coatings, and textured finishes (see 10.2.2).
- c. Coatings for Special Areas: These include paints for air conditioning equipment, clean, cold storage and dark rooms, grease pits, hot surfaces, radioactive areas, showers, storage tanks, and swimming pools (see 10.2.3).
- d. Coatings for Special Surfaces: Typical surfaces include acoustical tile, fabric, glass and plastic (see 10.2.4).
- e. Traffic Marking Paints: see Chapter 11, section 2.
- f. Wood Stains: Stains are used to change the color of wood, usually to either make the color uniform, to make it darker, or to simulate the color of a more expensive wood. For example, pine might be stained to look like walnut. Stains can be used only on unfinished (raw) wood.

Table 7-1
Types of Interio Finishes*

Finish						
Type	Solvent	Clear	Paint	Gloss	"Caution"	Notes
Alkyd	MS	X	X	Any	Avoid use on alkaline, damp surfaces.	All purpose.
Alkyd, odorless	OMS	O	X	Any	Avoid use on alkaline, damp surfaces.	Odorless, all purpose.
Cement	Water	O	X	Flat	Not for wood or metal.	Powder, porous film.
Epoxy	Lacquer thinner	O	X	High	Ex. adhesion, flexibility and chemical resistance.
Latex	Water	O	X	Flat	Not for unprimed wood or metal.	Easy to apply, low odor, fast dry.
Oleoresinous	MS	X	X		Avoid use on alkaline surfaces.	Mixed aluminum paint.
Phenolic	Arom	X	X	High	Darker color, water resistant, aluminum paint.
Rubber base	Arom	O	X	Any	Fast dry, moisture resistant.
Urethane--oil type . . .	MS	X	O	High	Avoid use on alkaline surfaces.	Fast dry, abrasion resistant.
Urethane--oil free . . .	Lacquer thinner	X	X	High	Ex. hardness, abrasion, chemical resistance.

MS--Mineral Spirits
OMS--Odorless Mineral Spirits
Arom--Mineral Spirits + aromatic solvents
X--Finish available
O--Not available
*--Appendix D-1, Table 3

7.2.4 ACCESSORY PRODUCTS. Other painting materials contribute to paint performance by their use in preparing the surface before the paint or varnish is applied. There are two major groups of these products: those used to put the surface into good condition and those used to prepare the surface for finishing. They are discussed in detail in Chapter 4.

7.2.4.1 Surface Preparation. The following materials are used to prepare interior surfaces for painting:

- a. Solvent Cleaners: See 4.4.3.1.
- b. Alkali Cleaners: See 4.4.3.2.
- c. Acid Cleaners: See 4.4.3.4, 4.4.3.5.
- d. Paint Removers: See 4.4.3.6.
- e. Phosphate Treatments: See 4.4.4.1, 4.4.4.2.

- f. Wash Primers: See 4.4.4.3.
- g. Knot Sealers: See 4.4.5.2.
- h. Wood Fillers: See 4.4.5.3a.
- i. Masonry Fillers: See 4.4.5.3b.

Also see Chapter 4, Tables 4-4 and 4-5.

7.2.4.2 Surface Repair. The following products are used to repair defects, fill crevices and openings and otherwise repair interior surfaces:

- a. Putty: See 4.5.3.
- b. Glazing Compounds: See 4.5.4.
- c. Patching Plaster: See 4.5.6.1.
- d. Spackle: See 4.5.6.2
- e. Joint Cements: See 4.5.6.3.
- f. Plastic Wood: See 4.5.6.5.

7.2.5 APPLICABLE SPECIFICATIONS. The specification products recommended for use in interior finishing are numerically listed in their appropriate groups in Appendix D-3. Products specified by appropriate use are listed as follows:

7.2.5.1 General Purpose Coatings. The finishes most commonly used in interior painting are listed in Appendix D-1, Table 3.

7.2.5.2 Special Purpose Coatings. The paints for specialized uses are listed in the following tables:

- a. Floor Finishes: See Appendix D-1, Table 5.
- b. Special Purpose Coatings: Special painting materials, coatings for special areas and coatings for special surfaces are listed in Appendix D-1, Table 6.
- c. Traffic Marking Paints: See Appendix D-1, Table 8.

7.2.5.3 Accessory Products. Materials used for surface preparation and repair are listed in the following tables:

- a. Surface Preparation: See Appendix D-1, Table 1.
- b. Surface Repair: See Appendix D-1, Table 2.

Section 3. SURFACE PREPARATION AND REPAIR

7.3.1 GENERAL. One of the most essential parts of any paint job is proper surface preparation. Paint will not adhere well, provide the required protection, nor have the desired appearance, unless the surface has been properly prepared.

7.3.2 TECHNIQUES. General methods for surface preparation and repair are described in Chapter 4, sections 4 and 5. They are referred to or described in more detail below, as required for the surface to be painted.

7.3.2.1 Wood. Sand all new surfaces smooth with No. 1/0 or 2/0 sandpaper; use No. 1 sandpaper first on rough spots. Use fine steel wool (00 or 000) on rounded or irregular surfaces. Remove loose paint by scraping, sanding carefully with coarse sandpaper such as No. 2, or by use of paint and varnish remover. (See Table 6-6.) Then sand as for new surfaces. Thoroughly clean all surfaces. Seal all knots or resinous areas with knot sealer and allow to dry at least 2 hours before priming. Fill all gouges, dents, and small openings with plastic wood. Use putty for larger openings (after priming). Allow to dry hard, then sand lightly with No. 2/0 sandpaper before painting. Wood must be dry before any painting is done, with a moisture content of not over 12 percent (See Figure 7-1.) If the surface is excessively damp, allow the wood to dry by ventilation in clear warm weather or artificial heat until it is dry enough to paint.

TABLE 7-2
Abrasive Grain Sizes

Classification	Symbol	Mesh
Very Coarse	4 1/2	12
	4	16
	3 1/2	20
	3	24
Coarse	2 1/2	30
	2	36
	1 1/2	40
	1	50
Medium	1/2	60
	1/0	80
	2/0	100
	3/0	120
Fine	4/0	150
	5/0	180
	6/0	220
	7/0	240
Very Fine	8/0	280
	9/0	320
	10/0	400
	11/0	500
	12/0	600

7.3.2.2 Concrete and Masonry. New concrete may be rough or very smooth depending on the finishing method used; concrete blocks usually are fairly rough. If a smooth finish is desired, fill rough surfaces with a masonry filler (see 4.4.5.3b). Treat smooth trowelled surfaces with a solution of 3 percent zinc chloride plus 2 percent phosphoric acid to etch the surface, and allow to dry (do not flush off). Remove old paint by mechanical treatments (see 4.4.2). Patch all cracks, openings and broken areas (see 4.5.6). Thoroughly clean all surfaces. If cement-water paint is to be used, dampen surfaces within 1 hour of painting. Use a garden hose or portable pressure tank sprayer, adjusted to a fine spray. Do not use a brush; it is inadequate. The surface must be moist, but not dripping wet, when the paint is applied. If

the surface tends to dry rapidly, as in hot weather, redampen it just before painting. The surface may be damp when a latex paint is applied, especially in hot weather, but it is not absolutely necessary as with cement paints. It must be dry when solvent-thinned paints are applied.

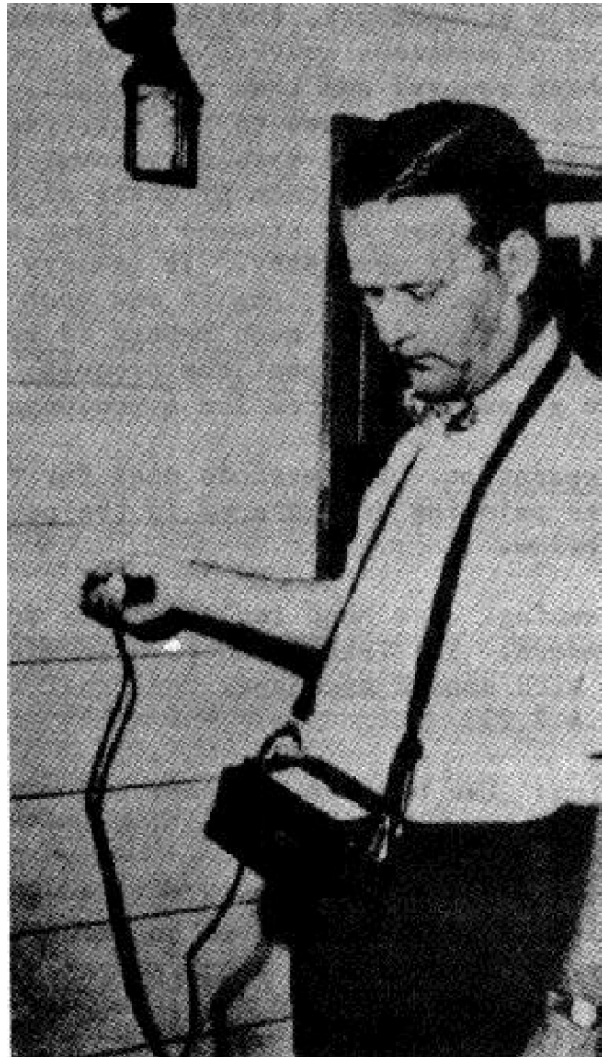


FIGURE 7-1
Moisture Meter

7.3.2.3 Metal. Unpainted iron and steel may have loose rust or mill scale, both of which will affect paint adhesion; rust may be present under loose paint on old work. Remove all loose and scaling paint, rust, mill scale, dirt, oil, and grease following methods outlined in Chapter 4, section 4. Sand edges of painted surfaces surrounding areas cleaned to substrate. Wire brush or sand metal and spot-prime with appropriate primer.

7.3.2.4 Plaster and Wallboard. Allow new plaster to age at least 30 days before painting, if an oil-base~ paint is to be applied. Latex paint can be applied after 48 hours, though a 30-day wait is generally recommended. Fill narrow cracks or small holes with spackle; larger openings or deep holes should be filled in thin layers with patching plaster. Allow spackle to dry 4

hours and plaster or joint cement 24 hours, then sand smooth before painting (see 4.5.6). On old work, remove all loose or scaling paint, then sand lightly, especially edges of surrounding painted areas. Wash off all dirt, oil, and stains, then allow to dry thoroughly if solvent-thinned paints are to be applied.

7.3.2.5 Removal of Very Old Paint. When multiple coats of paint have built up on interior walls or woodwork, they may present an unsightly appearance due to the presence of numerous cracks, peeling, or uneven areas where loose paint has often been removed and then repainted. In this case, it is best to remove all of the old paint down to the substrate. The best procedure is to apply a water-rinsable paint and varnish remover (nonsag type) and allow to stand for 15 minutes. Then apply steam by means of a wallpaper steamer. Move the steamer slowly and scrape the steamed surface with a wide bladed scraper. Repeat the process, if necessary. It is very important to avoid allowing the steamer pan to remain too long in one spot because this may cause water logging of the substrate. It is much better to keep the steamer pan moving slowly but continuously, and repeat the process, if necessary, rather than to concentrate the steam in any area for a prolonged period of time.

7.3.2.6 Surface Preparation. The methods used for the preparation of interior surfaces before painting are covered in the paragraphs in Chapter 4, section 4 referred to below.

a. Mechanical Cleaning. Use hand tools such as scrapers or brushes and power tools such as sanders. The latter can be used with rough sandpaper for removing old paint and with smooth sandpaper for final smoothing before painting (see 4.4.2.1 and 4.4.2.2).

b. Solvent Cleaning: Use brushes and rags for solvent cleaning (see 4.4.3.1).

c. Chemical Treatments: Apply dilute alkaline cleaners such as tri-sodium phosphate or dilute acid cleaners such as phosphoric acid using a stiff fiber brush. Scrub the surface thoroughly to remove contaminants. Pickling acids such as sulfuric, hydrochloric, and nitric acids, and hot phosphate treatments should be applied by dipping (see 4.4.3.2, 4.4.3.4 and 4.4.4.1). Be sure to wear goggles and rubber gloves.

d. Paint Removers: Use the wipe-off type on wood and the wash-off type on metal where flushing can be resorted to. Apply a thick coat using an old paint brush. Allow to stand for 15 to 30 minutes until the paint has blistered or softened. Remove with a broad knife. Repeat, if necessary, until all of the paint is removed. If the remover is a wipe-off type, clean the area with steel wool and solvent. Wash-off removers can be removed by flushing with water. Remove any residue with a scraper and steel wool and wipe dry (see 4.4.3.6). Removers and steam can be combined to remove thick layers of very old paint (see 7.3.2.5).

e. Wash Primers: Wash primers are pretreatments applied to metals to improve adhesion. They are intended for use on most metal surfaces prior to the application of a paint system. They are not themselves to be considered as permanent protective primers, though some protection is afforded for short periods of time. See note in Appendix D-4, Table 11. Apply by brush or

preferably by spray to a dry film thickness of 0.3 to 0.5 mil. The dry film should be translucent and not opaque. Recoat within 1 to 24 hours (see 4.4.4.3). Wash primers may be applied to damp surfaces (preferably by brushing) but not to wet surfaces. Dry film thickness must not exceed 0.5 mil. If applied in excess, an unreacted residue remaining on the surface will contribute to premature failure of the finishing system. The two component type (MIL-P-15328) is mixed just before use. It is most effective when freshly mixed and, in no case, may be used beyond 8 hours after mixing. The acid component for this product is not a thinner but is a necessary activator and must be used exactly as directed.

f. Knot Sealers: Knots occur in wood in varying sizes and shapes. They are particularly prevalent in southern pine. In the case of unpainted wood, apply one coat of MIL-S-12935 Knot Sealer to all knots prior to painting. For previously painted wood, where the paint has failed over a knot, scrape the area to bare wood, feather the edge with sandpaper, and apply a coat of knot sealer. Allow to dry for at least 2 hours before painting (see 4.4.5.2).

g. Wood Fillers: Wood filler is supplied as a paste to prevent hard settling. Mix thoroughly and add mineral spirits to produce a creamy consistency. Keep well mixed during use. Apply using a brush and wipe off across the grain using burlap or coarse cloth. Finish wiping with the grain using clean rags. (See 4.4.5.3a and Chapter 4, Table 4-5.)

h. Masonry Fillers: Apply filler using a fiber paint brush, broad knife, or trowel. Smooth the surface carefully, wetting the tool with water, if necessary (see 4.4.5.3b).

7.3.2.7 Surface Repair. The methods used for the repair of interior surfaces are covered in the paragraphs in Chapter 4, section 5 referred to below.

a. Putty and Glazing Compounds: Both are applied with a putty knife (see 4.5.5).

b. Patching Materials: Patching materials for small areas and crevices, e.g., spackle and plastic wood, are applied with a putty knife. Patching plaster is applied with a broad knife or trowel. Joint cement is applied with a broad knife (see 4.5.6.6). Be sure that the patched areas are thoroughly dry before painting.

Section 4. SELECTION, PREPARATION & APPLICATION OF COATING SYSTEMS

7.4.1 SELECTION OF COATINGS. The coating systems recommended for the standard interior surfaces covered in this chapter are listed in Appendix D-4, Tables 9 through 12. These tables are designed for the selection of coating Systems for new work. For previously painted surfaces, use one or two coats of the recommended interior top coat depending on the opacity desired, e.g., use two coats when applying a lighter color over a darker old paint. Review Chapter 6, paragraph 7.2.2 and Table 7-1, Chapter 7 before selection of a coating system.

7.4.1.1 Wood. The choice between clear or pigmented coatings for wood will depend on the serviceability and appearance desired, e.g., washability, abrasion resistance; high gloss, semigloss, or flat; white, tints, or colors. These properties are covered in Appendix D-4, Table 9.

7.4.1.2 Concrete and Masonry. The selection of paint for new concrete and masonry surfaces depends on the characteristics of the substrate, its location, and the appearance and service requirements of the coating. The principal characteristics of these surfaces are that they may be damp or highly alkaline. These characteristics are further aggravated on surfaces below ground, such as in basements, where concrete and masonry are commonly used. Do not use oil paints on unpainted concrete or masonry if either condition exists. Cement type paints are not suitable for cement asbestos surfaces. The finishes recommended for use on concrete and masonry are listed in Appendix D-4, Table 10.

7.4.1.3 Metal. The selection of coatings for interior metal is more specific than for other interior surfaces (though not as critical as selection for exterior surfaces), especially with regard to the primer. Metal surfaces are generally smooth, a property which results in decreased adhesion of coatings. They are usually thin and are subject to vibration and impact so that flexibility of the coating is important. Iron and steel are subject to corrosion so that a rust inhibiting primer must be used. Metal must be properly primed before painting. Pretreatment coatings (wash primers) MIL-P-15328, increase adhesion of both primers and top coats. Wash primers are adequate as base coats without primers on nonferrous metals. Pretreatment coatings must be overcoated. The selection of the topcoat is based on the conditions of exposure as well as the desired appearance, as with topcoats for other substrates. The recommended primers and top coats are listed in Appendix D-4, Table 11.

7.4.1.4 Plaster and Wallboard. The selection of paint for plaster is similar to that for concrete except that the surface generally is smooth; problems with water and alkali are similar. Do not use oil-based paints on new plaster until it has cured and dried for at least 30 days. Wallboard does not present this problem, but it is very porous so that nonpenetrating primers or sealers should be used. The top coat selection depends on service and appearance requirements as for the other substrates. The primers and top coats recommended are listed in Appendix D-4, Table 12.

7.4.1.5 Previously Painted Surfaces. The selection of paint to be used depends solely upon service and appearance requirements provided that the coating is compatible with the old painted surface. When the substrate is exposed during surface preparation, use the recommended primer on that area only. Then apply the recommended top coat as listed in Appendix D-4, Tables 9 through 12.

7.4.2 PREPARATION OF COATINGS FOR USE. Review Chapter 4, section 3, "Paint Conditioning and Mixing," for proper preparation of coatings before use.

7.4.2.1 Single-Package Systems. Single package systems are generally supplied ready for use. The only requirements is that they be stirred until uniform. When the primer and top coat are the same coating material, the primer may be thinned with up to 1 pint of thinner per gallon of paint to

improve penetration. When primer and top coat are of the same color, the primer should be tinted slightly to assure proper coverage by the top coat. Oil-type wood stains may be lightened in color by diluting with mineral spirits.

7.4.2.2 Multi-Package Paints. Stir each liquid component separately before combining. Blend components thoroughly. Note whether an induction or waiting period is required after blending and before use. Note also the length of time material is usable after individual components are mixed. Epoxy-type paints will increase in viscosity and eventually gel. Do not use if any thickening is evident. No physical change takes place with the two-package chromate-type wash primers when their usable life is ended. Although still capable of being applied, they will not give satisfactory performance. Thus, specification instructions and manufacturers' directions must be followed explicitly. To prepare cement-water paint, work dry material into a stiff paste by adding water in small portions, stirring constantly. Gradually stir additional water into the paste until the desired consistency is obtained. The amount of water used depends on the fineness of dry materials and is determined by trial. Aluminum paste is handled in much the same manner by adding small portions of the mixing varnish with constant stirring. Gradually, the remaining portion of varnish is added, while stirring continues, until the proper ratio of aluminum to varnish is achieved. Continue mixing until uniform.

7.4.3 APPLICATION OF COATINGS.

7.4.3.1 General. Coatings are normally applied by brush, roller, or spray. Rolling is the most common method for large areas such as walls and ceilings; brushing is the general method used on trim. Application by these methods and a discussion of the types of equipment available are included in Chapter 4, section 6. These procedures, as well as those for surface preparation (section 4) and surface repair (section 5) of Chapter 6 should be reviewed before painting operations begin.

7.4.3.2 Applying Clear Finishes. The number of coats required depends on the porosity of the surface. Most woods, except close grained woods such as maple, require 3 coats. Thin the first coat with up to 1 pint of thinner per gallon in order to obtain better penetration into the pores of the wood. Use a very clean brush and flow the varnish out in a thin coat to prevent sagging or wrinkling. Allow each coat to dry at least 24 hours and preferably 48 hours. Urethane finishes should be recoated within 16 to 24 hours because of their fast, hard dry. Waiting any longer may result in adhesion problems. Rub lightly with 000 steel wool and then wipe clean with a cloth dampened with mineral spirits before applying the next coat.

7.4.3.3 Applying Pigmented Finishes.

a. Primer-sealer, Latex, and Flat Paint: When applying primer-sealer, latex, and flat paints by brush, spread the paint on the surface with as little brushing as possible. Do not brush once the paint has set. Work in narrow sections, covering a small area with each brushful. Join sections with light curved or semi-circular strokes. When left undisturbed, the paint levels itself and brush marks disappear. These materials may also be applied by roller or spray.

b. Enamel: Apply semigloss and gloss enamels in a similar manner to flat paints. Enamels flow more than flat paints and more care is required in application to obtain a uniform film thickness, to avoid sagging, runs, and thin spots. Enamels may be applied by brush, spray, or roller.

c. Cement-Water Paint: Do not apply paint to frozen concrete or masonry or when the paint may be exposed to temperatures below 45° F within 48 hours after application. Scrub paint into the surface with a stiff fiber bristle brush. Apply two coats of paint of the same color, allowing 24 hours drying between coats. Each coat should be cured by spraying with water as soon as it is hard enough to resist injury to the paint (see 7.3.2.2 for application details or follow the manufacturer's directions).

d. Rubber-Base Paint (Solvent-type): For best results this paint should be applied directly to the bare concrete or masonry surface. Use two coats for normal service and three coats for maximum durability under severe conditions. When the surface to be painted has been previously coated with paint of another type, a small test section should be painted to determine that the strong solvent used in rubber-base paint does not remove the old coating. Old paint coatings which are affected by lifting should be completely removed. Rubber-base paint may be applied over cement water paint provided the surface is in satisfactory condition, that is, free of peeling, flaking, or chalking. The priming coat should be thinned with approximately 1 quart of xylene (TT-x-916) to each gallon of paint. Intermediate coats, where used, should be thinned with approximately 1 pint of xylene to each gallon. Paints may be applied by brush or spray.

e. Two-Component Epoxy: The two components shall be thoroughly mixed 1 hour before use. Prime and seal all previously painted or porous substrates as indicated in Tables 4-4 and 4-5 of Chapter 4 and in Appendix D-1, Table 1. Follow with one coat of epoxy paint. On new non-porous surfaces, omit the primer and sealer, and apply two coats of epoxy paint.

7.4.3.4 Applying Wood Stain. Stain may be applied with a rag or a brush. Wipe off excess stain from the surface before the stain dries. In some instances, on soft woods containing large bands of summer wood, e.g., flat-grained southern yellow pine or Douglas fir, it is desirable to apply a coat of thinned shellac as a sealer prior to staining. This provides for more uniform coloring by controlling penetration. Allow the stain to dry for 24 hours before filling or finishing with varnish.